


Raptor Scientific Physical Properties Systems is the premier provider of mass properties instruments and services utilized in mission-critical applications. The company's unmatched engineering expertise, combined with its superior testing and aftermarket services delivers industry-leading precision capabilities and a highly loyal customer base.

Mass Properties Measurement Instruments

We offer a range of instruments designed to measure a combination of weight, center of gravity, moment of inertia, and product of inertia. Our instruments are not only the most accurate in the world, but also the most reliable, some have been in daily use for more than 20 years!

Our extraordinary accuracy allows us to manufacture a single instrument that can accurately measure objects whose weight ranges from 100% to less than 3% of full scale. Other manufacturers must supply several different size instruments to accomplish the same goal.

A large, white, cylindrical spacecraft component is mounted on a complex, green, multi-axis gimbal test rig. The rig is positioned in a cleanroom environment. In the background, a satellite with large solar panels is visible against a dark space background with stars.

Physical Properties Systems

Global Provider of Test & Measurement Solutions



State-of-the-Art Technology, Unparalleled Accuracy

- **Weight and Center of Gravity (CG) Measurement Devices:** We offer 26 standard models that can assess large spacecraft over 35,000 lbs. down to bullet-sized objects of a few grams and millimeters.
- **Moment of Inertia (MOI) Measurement:** Capable of measuring a wide range of object sizes and weights and can measure MOI to better than 0.1%.
- **Full Mass Properties:** Instruments combine CG and MOI measurements with the world's most accurate technology.
- **Dynamic Balancing:** Measure Product of Inertia (POI) as well as Center of Gravity (CG) in both static or dynamic modes. Configurations accommodate explosion-proof and vacuum environments.
- **Gimbal Balancing:** We create the only comprehensive set of machines for gimballed platforms, such as those used in sensor suites and guided projectile seekers.
- **Moment Weight Scales:** Test the balance and moment weight of blades, fans, and engine turbines with the extraordinary sensitivity of our single-axle or multi-axle measurement devices.
- **Fixtures and Accessories:** We fabricate custom-made adapters and positioning fixtures for all types of objects.
- **Center of Buoyancy (CB):** The instrument can determine the mass, CG in the air, and CB with unparalleled accuracy.

Igniter Circuit Testers

Raptor Scientific is a designer and manufacturer of igniter circuit testers approved by the US Department of Defense for failsafe measurement of the resistance and stray voltage in the multiple electrical circuit paths leading to critical components, like explosives, missiles, or rocket ignition. Our igniter testers come in single-channel and multi-channel models for testing simple electronics paths to complex multi-path circuits.



Mass Properties Measurement Lab

We provide cost-effective mass properties services with faster turnaround times and greater efficiency. We identify and provide the best testing and /or measuring system to suit your measurement needs.

Our engineering team will work with you to build a test program that fully meets your measurement needs – schedule, accuracy, analysis, and reporting. Your engineers and technicians are welcome to participate in the testing, or you can hand the project over to our team of mass properties experts.

Additional High-Performance Products and Expert Services

- Air Bearings
- Air Data Test Systems
- Air Data Calibrators
- Blade Balancing
- Calibration and Support
- Engineering
- Equipment Leasing
- Inertial Roll Rate Decay
- Radar Cross Section (RCS) Measurement
- Repair & Overhaul
- Training

Why Raptor Scientific?

- **Unmatched Performance and Services Offerings** - Testing and aftermarket services combined with a "culture of support" offers vital feedback and guidance to customers before and after purchase
- **Product Innovations** - A proven record providing cutting-edge, highly complex solutions, with engineer-to-engineer market strategy ensuring solutions meet highly customized needs
- **Comprehensive Solution Set** - Extensive product range and solutions across diverse platforms and applications with complementary solutions and multiple value-add features.
- **Design Engineering Expertise** - Unmatched engineering and application expertise balances innovation and profitability

